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XXVIII. *Remarks on the Genus Dianthus.* By James Edward  
Smith, M. D. F. R. S. and P. L. S.

*Read March 5, 1793.*

WHEN a tribe of plants has been known from the earliest times in which any plants were noticed at all, and has attracted the attention of all botanists, as well as of every florist and gardener, one would expect it should be well understood, and that its species and varieties should distinctly be known one from another. Unfortunately, however, for the acquisition of truth, the reverse seems generally to be the case. The assistance which the bulk of mankind lend to any disquisition requiring acute judgment or deep investigation does not always tend to elucidation, though infallibly in some way or other to confusion. Hence such an endless variety of opinions, obstinately maintained in proportion to the weakness of their foundations, upon subjects on which most has been thought and written; and hence in their turn new swarms of writings arise from each variety of opinion. Happily for the advancement of natural history, it has never been a very lucrative study; otherwise even the multiplicity of solid facts on which it is founded could scarcely have prevented its becoming as disfigured and obscure as many others that are.

No genus, except perhaps that of roses, justifies the above remarks more than *Dianthus*; nor is scarcely any one less understood. This obscurity does not seem to have arisen, as in the *Geranium* tribe, from a casual intermixture of species, either in a wild or cultivated state; nor does it, as in *Rosa*, originate in the species being immensely numerous, and very nearly resembling each other, though it must be confessed their specific differences are, like those of roses, very difficult to define by methodical characters. The chief source of confusion has been the incorrect labours of authors.

This genus, by the elegance and fragrance of most of its species, as well as the frequent occurrence of many of them throughout Europe, has been noticed more or less in every botanical publication. The older botanists, emerging as it were from a thick cloud of ignorance and book-learning, to a view of Nature in broad daylight, did not at once acquire the faculty of seeing; still longer were they in learning to describe what they saw. They seem to have looked upon the face of Nature as from a balloon in the air. They could distinguish a forest tree from a rose bush; they saw the earth was clothed with flowers, and one great refinement of their observation seems to have been, that some were red, yellow, or blue, others white; they discovered that the fields were green with grass, but scarcely noted that all grass was not the same; nor did they dream there were tribes below that rank of vegetables, scarcely less numerous than those above it, and no less accurately distinguished, no less carefully fostered by the beneficent hand of Nature, than all the gorgeous ornaments of their own flower-gardens. When the science began to make a progress under the superintendance of some rare genius of gigantic powers, as a Gesner or Cæsalpinus, while each of its footsteps was accurately noted and delineated by the scrupulous fidelity of a Clusius, facts on facts were gradually accumulated, and each new observation  
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led the way to many more. Happy if all had been made with equal sagacity, and recorded with equal exactness! but every observer was not a Clusius or a Gesner, nor every delineator of plants a Fabius Columna.

The wooden cuts of that day, however wonderful in execution, and excellent for describing large distinct plants, in tribes whose forms are slender and delicate, and whose line of discrimination is small, are scarcely of any use, especially as they are seldom of the size of nature.

The genus of which I am about to treat, is one where figures have succeeded the worst. They have consequently been mistaken and erroneously quoted, more especially as not half the distinct species of *Dianthus* are figured at all in old authors, though their books contain numerous trifling and transient varieties of *D. Caryophyllus*, the favourites indeed of florists, but which a botanist would gladly resign for certain information concerning real species, important in the œconomy of nature.

The figures and accounts (for they can scarcely be called descriptions) of these plants in the earlier writers being therefore so confused, it is much to be lamented that systematic authors have quoted them with so little care. An erroneous synonym is worse than none at all. — Linnæus himself has been faulty in this respect.

Having long wished for some fixed ideas of a genus every day before one's eyes, and some species of which stand, the opprobrium of botanists, unnamed in every garden, I have made it my business to collect all the specimens possible, and to observe every herbarium that it has been my fortune to visit in different countries; hoping to learn at once to distinguish one species from another, and what authors intended by their different accounts. I had also in view at the same time the genus of *Arenaria*, still more

intricate in some respects; but its obscurity I have been more fortunate in removing than that of *Dianthus*. It may in a future paper, if this Society should think it worth their acceptance, be illustrated with some minuteness. I had destined the same pains to the genus of *Dianthus*; but, having found the confusion in herbariums and the descriptions and synonyms of authors inextricable, I am obliged now to content myself with offering detached remarks on the subject, like those on *Veronica* printed in the first volume of our Transactions. I take the species in their order, as in the fourteenth edition of *Syst. Vegetabilium*.

3. *D. ferrugineus*, *Mant.* 563. Linnæus quotes in manuscript *Miller's Icones* t. 81. f. 2, which is undoubtedly the plant, though an ill-coloured indistinct representation, which would be of no use if any obscurity hung about the species.
7. *D. diminutus*. Of this there is no specimen in the Linnean herbarium. All that I have ever seen so named, were evidently *D. prolifer*, varying with a single flower in each common calyx, as Linnæus himself seems to have been persuaded.
11. *D. rupestris*, *Suppl.* 240, is nothing else than *D. virgineus*, whose history I shall give in its place.
12. *D. glaucus*. What Linnæus intended by this is the little white pink with a purple eye, to be found in several gardens, and which many have thought a variety of *deltoides*, differing only in the white colour of its flowers, and in having four scales to the calyx instead of two, which is a variable circumstance. I  
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confess myself unable to find a specific difference between them, and am persuaded Mr. Hudson is right in making it a variety in his *Flora Anglica*, for that it is what he intends by his *deltoides*  $\beta$ , I learned from himself, and his quotation of Dillenius, fig. 384, evinces it. The last mentioned author gives this as a British plant on report only; nor do I know any certain instance of its being found wild, except Mr. Lightfoot's authority in *Flora Scotica*, where it is rightly given as *D. glaucus* of Linnæus. One cannot but wonder Mr. Hudson should have applied this denomination, with its *differentia specifica*, to another plant, the Chedder pink, at the same time quoting Dill. f. 385, which has nothing to do with *D. glaucus*, and which Linnæus, indeed, by no less an error, makes a variety of his *D. virgineus*. This point I have already cleared up in *English Botany*, t. 62, describing the Chedder pink as a new species by the name of *D. cæsius*, of which therefore I shall say no more at present.

17. *D. arenarius*. For this little-known species Linnæus is the only certain authority. The specimen in his herbarium is from Sweden. The synonyms of Bauhin and Clusius he has erased from his own copy of *Species Plantarum*, and surely the *Armerius flos tertius* of Dodonæus, p. 176, ought also to be struck out. Nor do I find any good reason to depend on the synonyms of Le Monnier and Sauvages.

Neither has this any right to a place in our *Flora Anglica*. Mr. Hudson has assured me he meant, by his *D. arenarius*, the common pheasant's eye pink of the gardens, which occurs sometimes apparently wild on old walls, and seems to belong to *D. Caryophyllus*.

19. *D. vir-*

19. *D. virgineus*. Linnæus having originally described this in the first edition of *Species Plantarum* from Burser's Herbarium, preserved at Upsal, without having any specimen in his own, I had no means of determining it with certainty but by applying to Professor Thunberg, who very obligingly sent me a drawing of the original specimen, by which it clearly appears this is no other than the plant Professor Jacquin has rightly taken for *virgineus*, and figured in his *Flora Austriaca*, vol. 5. *append. t.* 15. I have it from himself. Linnæus, towards the latter part of his life, having had this pink in his garden at Upsal from the Alps, described it afresh, forgetting it was his own *virgineus*; and forgetting also that he had already named one *Dianthus alpinus*, he gave that denomination to this supposed new species. The latter error however his son corrected, publishing it in the Supplement by the name of *rupestris*. But another fault occurs in that work with respect to the synonym, *Caryophylleus primus*, *Clus. hist.* p. 282, *figura tenuis*. Linnæus wrote it *figurâ tenuis*, meaning that the figure, not the description, agreed with his plant. I beg leave however to assert that neither is by any means referable to it. This is the very same individual figure, printed in Dodonæus by the name of *Armerius flos tertius*, above mentioned. For what it was intended, I do not presume to determine; unless it may be my *cæsius*, with which the description of Clusius agrees pretty well. Yet here the weighty opinion of Dillenius in *Hort. Eltham.* is against me. The synonyms of this genus form the most inextricable botanical labyrinth I ever yet entered.

I gathered *D. virgineus* on the white limestone rocks opposite the post-house on Mount Cenis in August 1787. The stems were decumbent, not prostrate, and the flowers appeared to me inodorous. Linnæus remarks the contrary. It ought to

be removed to the division of *Flores solitarii, plures in eodem caule*. The specimen in Burser's Herbarium, being a meagre one, sufficiently shews why Linnæus placed it among those whose stems are single-flowered. I have reason to think, from the information of my most accurate friend Mr. Davall, F. L. S. this is commonly taken for *D. Caryophyllus* in Switzerland. What Haller has called it I do not yet know. His account of this genus is as confused as any body's.

20. *D. arboreus*. Of this Linnæus had no specimen, and he confounds under it two very different species. His specific character, *foliis subulatis*, agrees best with the plant of Tournefort; but in his own copy of *Sp. Plant.* he has erased that synonym, seeming thus to intend Bauhin's for his real *arboreus*. Yet he has added as a synonym, *Caryophyllus arboreus sylvestris, Alpin. Exot. 59. t. 38*, justly observing that the figure is bad. Indeed so execrable is this figure, and so incomplete the description, not a word being said whether the figure be of the natural size or diminished, which in this case would determine the point, that I cannot tell to which of these two most different species it belongs. Supposing it not to be a much diminished representation, it must be Tournefort's *Caryophyllus creticus arboreus, juniperi folio, Coroll. 23*. which I shall hereafter describe, and with which Alpinus's description of the "slender leaves resembling those of wild pinks, and the small flowers," agrees much better than with Bauhin's plant. The latter, which I venture to consider as the real *D. arboreus* of Linnæus, is very tolerably figured and described in John Bauhin's *Historia, vol. 3. 328*.

21. *D. fruticosus*. I am persuaded, from Tournefort's own specimens, this is only a variety of the last mentioned *arboreus*, having  
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broader and obtuse leaves, but differing in no other respect from that of Bauhin.—They are both very noble and ornamental plants, and it is pity they are lost to our gardens.

The present remarks, imperfect as they are, would be still more so if I did not attempt to describe such new species of this genus as are certainly known to me, as well as to reform the specific characters of the others, some of which are at present quite insufficient, and even erroneous.

Those whose characters need no alteration I shall merely enumerate by the Linnæan names.

\* *Flores aggregati.*

1. *D. barbatus.*
2. *D. carthusianorum*, floribus subaggregatis, squamis calycinis ovatis aristatis tubo brevioribus, foliis linearibus trinerviis.
3. *D. ferrugineus.*
4. *D. Armeria.*
5. *D. japonicus.* Thunb. Fl. Jap. 183. t. 23.
6. *D. prolifer.*

\*\* *Flores solitarii, plures in eodem caule.*

7. *D. diminutus*, anne varietas præcedentis?
8. *D. Caryophyllus*, floribus solitariis, squamis calycinis subrhombicis brevissimis, petalis crenatis imberbibus.



9. *D. pomeridianus*, flor. solitariis, squamis calycinis ovatis acutis brevissimis; tubo apice tantum striato, petalis emarginatis subintegerrimis.

This is the only species I have ever seen whose calyx is smooth in the lower part, while the upper half is striated, and that very strongly and accurately.

10. *D. deltoides*, flor. solitariis, squamis calycinis ovato-lanceolatis acutis subbinis, foliis obtusifusculis subpubescentibus, petalis crenatis.

β. *D. glaucus* *Linn.* Varietas squamis calycinis sæpiùs quaternis, foliis magis glaucis, subinde glabris, limbo petalorum albo (nec carneo) semper cum lineâ transversâ purpureâ ad basin ut in α.

11. *D. chinensis*, flor. solitariis, squamis calycinis subulatis patulis foliaceis tubum æquantibus, petalis crenatis, foliis lanceolatis.

I have a plant from Mr. Sikes's garden at Hackney which seems a hybrid between this species and *D. barbatus*.

12. *D. monspeliacus*, flor. solitariis, squamis calycinis subulatis rectis tubo parum brevioribus, corollis multifidis, caule erecto.

13. *D. plumarius*, flor. solitariis, squamis calycinis subovatis brevissimis obtusissimis muticis, corollis multifidis.

14. *D. crinitus*, flor. solitariis, squamis calycinis ovalibus mucronatis subdivergentibus tubo triplo brevioribus, petalis multifidis imberbibus.

Caryophyllus orientalis, minimus, tenuissimè laciniatus, flore purpureo. *Tournef. Cor. 23.*

*Habitat* in Armeriâ. Variat flore albo. *Tournefort.*

*Caules*

*Caules* spithamei, læves. *Folia* linearia, angustissima, brevissima, obtusiuscula, lævia. *Flores* duo vel quatuor in caule, erecti. *Calyx* tubo gracili, striato, dentibus lanceolatis rectis acutissimis; squamis ad basin quatuor, exactè ovalibus, dorso striatis, mucrone brevi patente. *Petala* angusta, limbo ad basin usque irregulariter multifido-capillaceo, imberbi.

15. *D. superbus*, flor. solitariis paniculatis, squamis calycinis brevissimis acuminatis, petalis multifido-capillaribus, caule erecto.
16. *D. attenuatus*, flor. solitariis, squamis calycinis brevibus lanceolatis acuminatis subsenis; tubo apice attenuato, petalis crenatis.

Caryophyllus maritimus, supinus, foliis angustissimis, aculeatis, multiflorus. An Caryophyllus sylvestris repens multiflorus C. B. Prod.\*?—*Herb. Tournef.*

*Habitat* in maritimis Galliaë meridionalis, *Broussonet*. Ex horto regio Parisiensi etiam habui.

*Caules* diffusi, basi lignosi, tortuosi, ramosissimi; rami floriferi ascendentes, pedales, foliosi, teretes, glabri, apice in ramulis 2 vel 3 divisi, unifloris. *Folia* subulata, mucronatopungentia, glauca, margine scabra; caulina internodiis breviora. *Flores* carnei, inodori. *Calyx* squamis sex ad basin, quarum interiores sæpè margine membranaceæ; tubo striato, apicem versus sensim attenuato, dentibus erectis, margine membranaceis. *Corolla* parva, crenata, imberbis.

17. *D. pungens*, flor. solitariis, caulibus paucifloris, squamis calycinis brevissimis mucronatis patentibus; tubo gibbo, petalis integris.

\* Nequaquam. Conf. *D. virgineum*.

18. *D. virgineus*, flor. solitariis, caulibus paucifloris, squamis calycinis brevissimis obtusissimis binis, petalis crenatis.

*D. rupestris*. *Linn. Suppl.* 240.

*Caryophyllus sylvestris repens multiflorus*. *Baub. Pin.* 209.  
*Prod.* 104. *Herb. Burser.* vol. II. p. 99.

\* \* \* *Caule unifloro herbaceo.*

19. *D. cæsius*, caulibus subunifloris, squamis calycinis subrotundis brevibus, petalis crenatis pubescentibus, foliis margine scabris.

*D. cæsius*, *Sorwerb. Engl. Bot.* t. 62.

— *glaucus*, *Huds. Fl. Angl.* 185.

*Armeriæ* species flore in summo caule singulari, *Raii Syn.* 336.

*Tunica rupestris*, folio *cæσιο* molli, flore carneo, *Dill. Hort.*

*Elth.* 401. t. 298. f. 385.

*Habitat* in Angliâ. In Helvetiâ, *Davall.*

*Radix* lignosus. *Caules* plures, spithamei, erecti, simplices, glabri, quadranguli, conjugationibus foliorum duobus vel tribus, uniflori, vix unquam biflori. *Folia* lineari-lanceolata, obtusifuscula, glauca, margine scabra. *Calycis* squamæ tubo triplo breviores, ovato-subrotundæ, obtusè mucronatæ, striatæ. *Petalâ* carnea, obtusè duplicato-crenata, basi lineata atque barbata.

20. *D. alpinus*, caule unifloro, petalis crenatis, squamis calycinis exterioribus foliaceis tubum subæquantibus.

Variat foliis obtusis & acutis.

21. *D. arenarius*.

\* \* \* \* *Fru-*

\* \* \* \* *Frutescentes.*

22. *D. arboreus*, caule fruticoso, foliis oblongis subcarnosis, squamis calycinis numerosis obtusis arctè imbricatis brevissimis.  
*Betonica coronaria arborea cretica*, *Bauh. Hist.* 3. 328. f. 2.

β. *D. fruticosus*, *Linn.*

*Caryophyllus græcus arboreus*, *Leucoii folio peramaro*. *Tournef. It. v. I.* 70, cum figurâ.—Nullo modo ab α differt, nisi foliis brevioribus, parum latioribus, & obtusis.

23. *D. juniperinus*, caule fruticoso, foliis subulatis, squamis calycinis subquaternis obovatis mucronato-pungentibus patulis tubo duplo brevioribus.

*Caryophyllus creticus arboreus*, *Juniperi folio*, *Tourn. Cor.* 23.

*C. sylvestris arboreus*, *Alpin. Exot.* 39, t. 38?

*Habitat in Cretâ. Tournefort.*

*Caulis* fruticosus, cortice rimoso lacero, ramosissimus, ramuli apice densè foliosi; floriferi elongati, cum oppositionibus 2 vel 3 tantum foliorum, internodiis multo breviorum, teretes, glabri. *Folia* subulata, angustissima, mucronato-pungentia, canaliculata, margine lævi. *Flores* bini vel terni in apicibus ramulorum, pedicellati, parvi. *Calycis* squamæ obovatæ, obtusæ, vix striatæ, margine apiceque membranaceæ, mucrone pungenti, divaricato, brevi, terminatæ, tubo duplo breviores; tubus striatus, dentibus acutis, margine haud membranaceis. *Petala* crenata & incisa. *Styli* exserti, capillares.

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I have taken the liberty of altering the arrangement of the Linnæan species in some degree, introducing my new ones as much as possible according to their affinities. *D. pungens* not being at all more shrubby than many others, reckoned by Linnæus herbaceous, is most conveniently placed near those species, to which it is, in other respects, naturally allied.